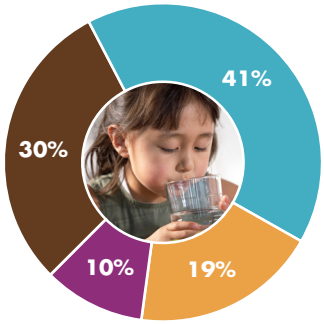
Santa Clara Valley Water District

Groundwater Quality Summary Report

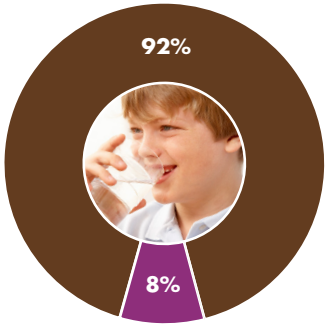
For Testing Performed in 2015

Protecting our Groundwater

NORTH COUNTY WATER USE



SOUTH COUNTY WATER USE



- Groundwater
- Treated Water
- Hetch-Hetchy
- Other Local and Recycled Water

Groundwater is an essential local resource, providing about half of the water used in Santa Clara County each year. In some areas, groundwater is the only source of drinking water. Protecting our groundwater helps ensure adequate supplies are available now and in the future.

The Santa Clara Valley Water District works to safeguard groundwater by:

- Replenishing groundwater with local and imported surface water.
- Reducing demands on groundwater through the delivery of treated water, water conservation and water recycling.
- Monitoring groundwater and implementing programs to protect against contamination.

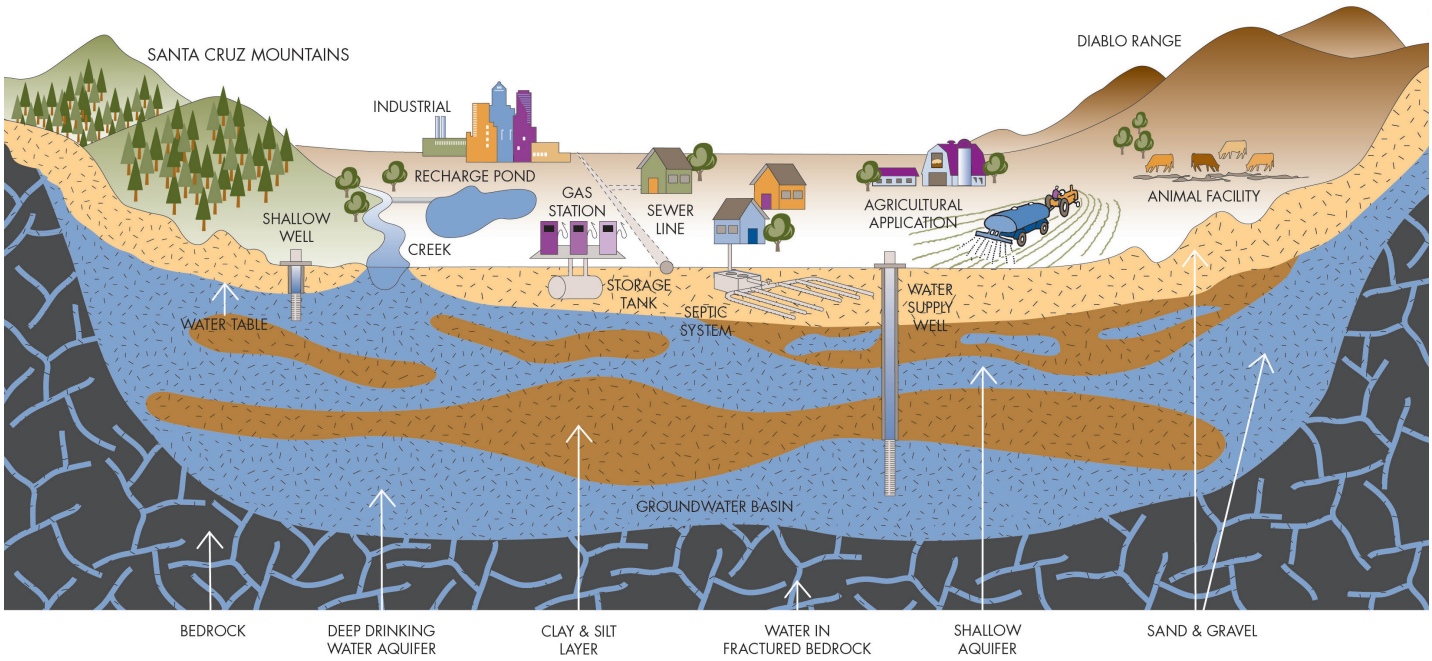
Regular well testing throughout the county indicates that groundwater quality is generally very good. Drinking water, including bottled water, may contain at least small amounts of some contaminants. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and radioactive materials, and can pick up substances from animal and human activities.

Contaminants that may be present include:

- Microbial contaminants such as viruses and bacteria that may come from sewage treatment plants, sewer lines, septic systems, agricultural operations and wildlife.
- Inorganic contaminants such as salts and metals that can be naturally occurring or result from stormwater runoff, industrial or domestic wastewater discharges, animal facilities, farming, and mining.
- Pesticides, fertilizers and herbicides that may come from agriculture, stormwater runoff and residential uses.
- Organic chemicals including synthetic and volatile organic chemicals from industrial processes, gas stations, dry cleaners, stormwater runoff, agricultural application and septic systems.
- Radioactive contaminants that are typically naturally occurring in our area.

The presence of natural or man-made contaminants does not necessarily indicate that water poses a health risk. State and federal drinking water standards identify maximum contaminant levels that relate to health risk.

Everyone has a role in protecting groundwater. Well owners should maintain their wells and septic systems, and create a zone of protection around the well where no contaminants are used or stored. See the water district's Guide for the Private Well Owner at **www.valleywater.org** for helpful tips. Residents can help by conserving water and by raising awareness that activities on the land surface can affect our largest drinking water reservoir, which is beneath our feet.



2015 Groundwater Quality Summary

Monitoring confirms generally high groundwater quality, but South County nitrate is a concern

In 2015, the water district sampled over 230 domestic water supply wells and evaluated data from over 225 local water supplier wells. The table below summarizes groundwater quality results for North and South County (see map on back page.) 2015 results show that nearly all wells tested meet drinking water standards with the notable exception of nitrate in South County domestic wells. The water district works with regulatory and land use agencies on this ongoing groundwater protection challenge.

Water from public water systems must meet Maximum Contaminant Levels (MCLs), but domestic systems are not subject to these standards. It should be noted that not every well was tested for all parameters shown, and only parameters that were detected in water supply wells are listed. Water quality standards, including MCLs, are shown to provide context for groundwater quality results. This is a regional summary and may not reflect the water quality in your well since every property and well is unique.

Primary Drinking Water Standards - Public Health Related Standards				North County		South County		
Inorganic Contaminants	UNITS	PRIMARY MCL	PHG	MEDIAN	RANGE	MEDIAN	RANGE	Typical Sources
Aluminum	ppb	1,000	600	12.96	ND - 89	17.73	ND - 220	Erosion of natural deposits
Arsenic	ppb	10	0.004	0.06	ND - 4	0.35	ND - 5	Erosion of natural deposits; glass and electronics production waste
Asbestos	MFL	7	7	ND	ND	0.33	ND - 2.1	Erosion of natural deposits
Barium	ppb	1,000	2,000	110	ND - 290	106	53.7 - 280	Erosion of natural deposits
Chromium (total)	ppb	50	—	1.0	ND - 17	1.57	ND - 17	Erosion of natural deposits; metal plating
Chromium-6 (hexavalent)	ppb	10	0.02	1.4	ND - 6.6	1.18	ND - 9.6	Erosion of natural deposits; metal plating and industrial discharges
Fluoride (natural source)	ppm	2	1	0.10	ND - 0.89	0.05	ND - 0.59	Erosion of natural deposits
Nickel	ppb	100	12	1.1	ND - 1.71	1.02	ND - 6.89	Erosion of natural deposits; discharge from metal industries
Nitrate (as NO3)	ppm	45	45	14.6	ND - 57.1	26	ND - 139	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits
Nitrate + Nitrite (as N)	ppm	10	10	3.3	4.8 - 7.7	4.75	1.1 - 10	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits
Nitrite (as N)	ppb	1,000	1,000	ND	ND	216	ND - 400	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits
Perchlorate	ppb	6	6	ND	ND	1.32	ND - 5.6	Solid rocket propellant, fireworks, explosives, flares, matches, and a variety of industries
Selenium	ppb	50	30	ND	ND	1	ND - 2	Erosion of natural deposits
Radioactive Contaminants								
Gross Alpha	pCi/L	15	—	1.6	ND - 6	1.32	1.32 - 3.32	Erosion of natural deposits
Volatile Organic Chemicals								
1,1,1-Trichloroethane (1,1,1-TCA)	ppb	200	1,000	ND	ND - 1.8	ND	ND	Discharge from metal degreasing sites and other industrial processes
Tetrachloroethene (PCE)	ppb	5	0.06	ND	ND	ND	ND - 2.7	Discharge from industrial processes, dry cleaners, and automotive repair
Total Trihalomethanes (THMs)	ppb	80	—	0.7	0.5 - 1	NA	NA	Discharge from industrial processes, dry cleaners, and automotive repair
Xylenes (total)	ppb	1,750	1,800	ND	ND - 0.5	NA	NA	Discharge from industrial processes, dry cleaners, and automotive repair
Microbiological Contaminants[1]				Present	Absent	Present	Absent	Typical Sources
E. Coli Bacteria				1	25	3	185	Human and animal fecal waste
Total Coliform Bacteria				11	15	67	121	Naturally present in the environment

Notes: 1) The table shows the number of domestic wells tested that had bacteria present or absent. Public water systems are required to ensure that fewer than 5% of samples have total coliform present and that no samples have e.coli present. Domestic wells are not subject to these standards.

Terms and Definitions

Color units: A measure of color in water

Maximum Contaminant Level (MCL): The highest level of a contaminant allowed in public water systems. Primary MCLs are set as close to PHGs as is economically and technologically feasible. Secondary MCLs protect the odor,taste, and appearance of drinking water.

Median: The "middle" value of the results, with half of the values above the median and half of the values below the median.

MFL: = Million Fibers per Liter

NA: Not analyzed

ND: Not detected (at laboratory testing limit)

NTU: Nephelometric Turbidity Units

pCi/L: picoCuries per liter (a measure of radiation)

ppm: parts per million (milligrams per liter)

ppb: parts per billion (micrograms per liter)

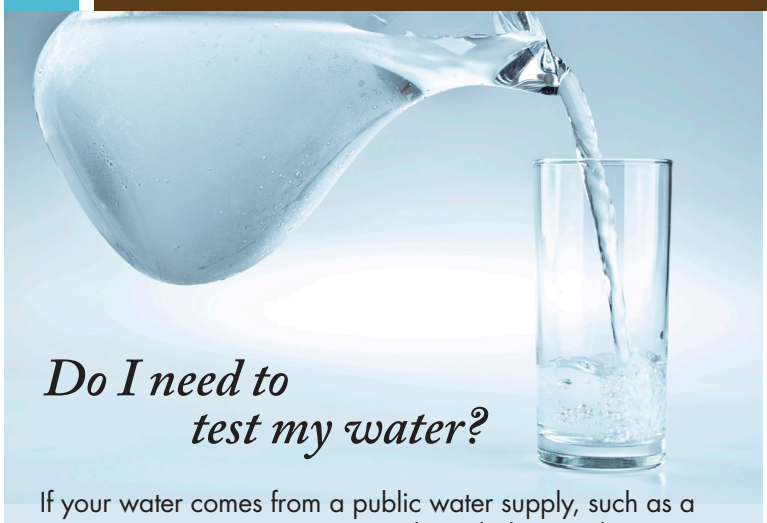
Public Health Goal (PHG): The level of a contaminant in drinking water below which there is no known or expected risk to human health. PHGs are set by the California EPA.

TON: Threshold Odor Number

uS/cm: microSiemens per centimeter (a measure of the dissolved inorganic salt content)

2015 Groundwater Quality Summary

Secondary Drinking Water Standards - Aesthetic Standards	UNITS	SECONDARY MCL	PHG	North County MEDIAN	North County RANGE	South County MEDIAN	South County RANGE	Typical Sources
Chloride	ppm	250	—	48	31 - 151	41	10 - 152	Runoff/leaching from natural deposits; seawater influence
Color	color units	15	—	ND	ND - 9	5	ND - 10	Naturally-occurring organic materials
Copper	ppb	1,000	300	1.22	0.74 - 1.7	3.77	0.85 - 68	Internal corrosion of household plumbing systems; erosion of natural deposits
Foaming Agents (MBAS)	ppb	500	—	ND	ND - 0.05	0.03	ND - 0.05	Non-point source pollution; discharges from industrial processes
Iron	ppb	300	—	29.9	ND - 1,100	14.99	4.4 - 1,500	Leaching from natural deposits; industrial wastes
Manganese	ppb	50	—	ND	ND - 120	0.8	ND - 120	Leaching from natural deposits; industrial wastes
Odor Threshold	TON	3	—	ND	ND - 1	ND	ND - 1	Naturally-occurring organic materials
pH	pH units	6.5 - 8.5	—	6.92	7.46 - 8	7.7	6.99 -8.5	Erosion of natural deposits; carbon dioxide emissions; rainfall
Specific Conductance	uS/cm	900	—	700	420 - 2,100	640	357 - 1,370	Substances that form ions when in water; seawater influence
Sulfate	ppm	250	—	43.4	5.1 - 239	36	5.3 - 140	Runoff/leaching from natural deposits; industrial wastes
Total Dissolved Solids (TDS)	ppm	500	—	410	260 - 620	376	180 - 760	Runoff/leaching from natural deposits
Turbidity	NTU	5	—	0.27	0.1 - 3.9	0.36	ND - 3.8	Soil runoff
Zinc	ppb	5,000	—	25.6	ND - 100	2.1	ND - 100	Runoff/leaching from natural deposits; industrial wastes
Other Water Quality Parameters								
Acifluorfen	ppb			ND	ND - 0.5	NA	NA	Herbicide
Alkalinity (total, as CaCO3)	ppm	—	—	230	81 - 380	190	94 - 370	Atmospheric and vadose zone carbon dioxide
Ammonia (NH3-N)	ppm			ND	ND - 0.05	NA	NA	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits
Boron	ppb	—	—	ND	ND - 172	106	51.9 - 4,600	Erosion of natural deposits
Bromide	ppm	—	—	0.16	ND - 1.71	0.17	ND - 0.91	Erosion of natural deposits; seawater intrusion; sea spray
Caffeine	ppb	—	—	ND	ND - 0.05	NA	NA	Wastewater
Calcium	ppm	—	—	67	26 - 110	52	5.9 - 107	Erosion of natural deposits
Carbon Dioxide	ppm	—	—	15	2 - 54	NA	NA	Atmospheric sources; dissolution of carbonate rocks
Chloromethane	ppb	—	—	ND	ND	ND	ND - 0.97	Discharge from industrial processes, dry cleaners, and automotive repair
Cobalt	ppb	—	—	ND	ND - 1	ND	ND	Leaching from natural deposits; industrial wastes
Diazinon	ppb	—	—	ND	ND - 0.1	NA	NA	Insecticide
Dichlorodifluoromethane (Freon 12)	ppb	—	—	ND	ND - 12.95	ND	ND	Discharge from industrial processes, dry cleaners, and automotive repair
Diisopropyl Ether	ppb	—	—	ND	ND - 3	ND	ND	Leaking underground storage tanks; discharge from petroleum facilities
Dimethoate	ppb	—	—	ND	ND - 0.1	NA	NA	Insecticide
Hardness (Total, as CaCO3)	ppm	—	—	300	99 - 558	270	ND - 586	Erosion of natural deposits
Lead	ppb		0.2	0.66	ND - 1.06	0.26	ND - 5.6	Erosion of natural deposits; internal corrosion of household water plumbing systems; discharges from industrial manufacturers
Lithium	ppb	—	—	5	ND - 7.5	9.60	ND - 27	Erosion of natural deposits; discharge from industrial uses
Magnesium	ppm			25	8.6 - 58	31.0	9.2 - 72	Erosion of natural deposits
Methiocarb	ppb	—	—	1.13	ND - 2	NA	NA	Pesticide
Metolachlor	ppb			ND	ND - 0.05	NA	NA	Herbicide
Metribuzin	ppb	—	—	ND	ND - 0.05	NA	NA	Herbicide
Molybdenum	ppb	—	—	ND	ND - 2.3	ND	ND - 4.4	Erosion of natural deposits
Orthophosphate	ppm	—	—	0.14	ND - 1.18	0.08	ND - 1.66	Leaching from natural deposits; agricultural runoff
p-Isopropyltoluene	ppb	—	—	ND	ND - 0.5	ND	ND	Discharge from industrial processes, dry cleaners, and automotive repair
Potassium	ppm	—	—	1.2	0.8 - 1.8	1.3	ND - 2.6	Erosion of natural deposits
Propoxur	ppb	—	—	ND	ND - 2	NA	NA	Insecticide
Radium 228	pCi/L	—	0.019	ND	ND	0.045	0.045 - 0.045	Erosion of natural deposits
Silica	ppm	—	—	26.0	24.1 - 27	26.0	18.7 - 43	Erosion of natural deposits
Sodium	ppm	—	—	30.5	16.1 - 69	26.1	14 - 197	Erosion of natural deposits
Tert-Butyl Alcohol	ppb	—	—	ND	ND	ND	ND - 4.1	Discharge from industrial processes, dry cleaners, and automotive repair
Total Organic Carbon (TOC)	ppm	—	—	ND	ND - 0.3	NA	NA	Various natural and manmade sources
Vanadium	ppb	—	—	ND	ND	ND	ND - 12	Erosion of natural deposits; discharge from industrial uses



Do I need to test my water?

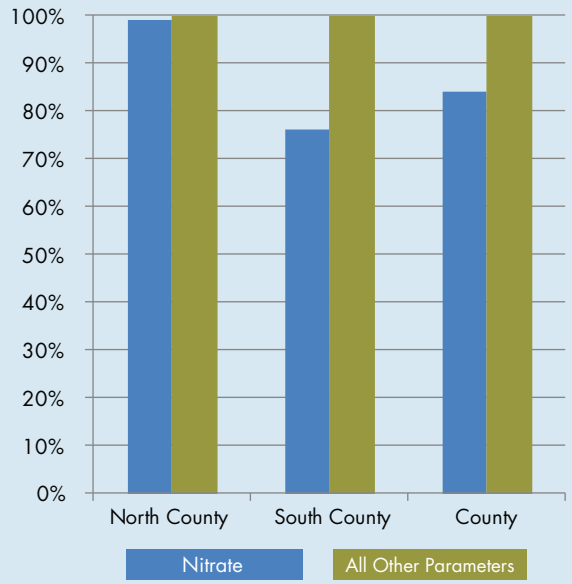
If your water comes from a public water supply, such as a city or water company, it is tested regularly to make sure that it meets state and federal drinking water standards.

If your water comes from a private well, you are responsible for making sure it is safe to drink. Although the water district monitors regional groundwater quality, every property and well has unique conditions. Some contaminants are colorless and odorless, so the first step in protecting your health is having your water tested.

The water district encourages private well owners to have their well water tested by a state-certified laboratory annually or more often if there is a change in taste, odor or appearance. If your water contains any contaminant above drinking water standards, you may want to install a treatment system or use an alternative source of water.

The water district currently offers free basic water quality testing for domestic wells and rebates of up to $500 for nitrate treatment systems — call the Groundwater Hotline at **(408) 630-2300** to find out if you are eligible.

PERCENTAGE OF WATER SUPPLY WELLS TESTED IN 2015 MEETING PRIMARY DRINKING WATER STANDARDS



Hot Topics in Water Quality

Nitrate

As shown in the chart to the left, nitrate is an ongoing groundwater protection challenge, particularly in South County. Common sources are fertilizers, septic systems and livestock waste, so nitrate is often higher in rural and agricultural areas. Nitrate can interfere with the blood's ability to transport oxygen and is of greatest concern for infants and pregnant women. Consuming high levels of nitrate may cause "blue baby syndrome;" symptoms include shortness of breath and blueness of the skin.

The water district monitors nitrate to assess hot spots and trends, recharges groundwater which helps dilute nitrate, and works with other agencies to address nitrate in groundwater. To help reduce domestic well owners' exposure to nitrate in drinking water, the water district is offering rebates of up to $500 for eligible treatment systems. Call the Groundwater Hotline at **(408) 630-2300** for more information.

Perchlorate

Perchlorate is a salt used for rocket fuel, highway flares, fireworks and other uses. Perchlorate can have adverse health effects at high levels as it can interfere with the thyroid gland, which can affect hormones that regulate metabolism and growth. Contamination from a former highway flare manufacturer in Morgan Hill was first discovered in 2000. At the urging of the water district and the community, the Central Coast Regional Water Quality Board has taken timely action to restore groundwater quality.

Due to cleanup activities and groundwater recharge, perchlorate levels have decreased dramatically. The area affected is also getting smaller, now extending from Tennant Avenue south to the San Martin Airport area. A few water supply wells still contain perchlorate above the drinking water standard and remediation by the responsible party is ongoing.

Chromium-6

Chromium-6, a suspected carcinogen, is a naturally occurring metal that is also used in several industrial processes. Geologic deposits containing chromium-6 are present in areas of Santa Clara County. California's drinking water standard of 10 parts per billion (ppb) for Chromium-6 became effective on July 1, 2014.

Lead

Lead and other metals are naturally present at low levels in groundwater due to the erosion of natural deposits. Groundwater is generally not corrosive by nature. Lead may be introduced to drinking water from faucets, plumbing fixtures and lead solder within the home and from lead service lines, if they are present. For more information, please visit **www.valleywater.org**.

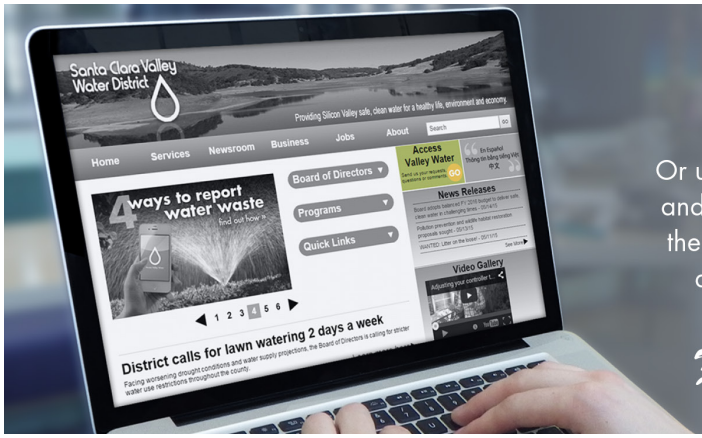
You live on a groundwater basin

NORTH COUNTY
Generally extends north from Metcalf Road to San Francisco Bay

SOUTH COUNTY
extends from the Coyote Valley south to the Pajaro River

Health and education information

Drinking water, including bottled water, may reasonably be expected to contain small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained from the U.S. Environmental Protection Agency's Safe Drinking Water Hotline (**800-426-4791**), the CA Division of Drinking Water (**www.waterboards.ca.gov/drinking_water/programs**), the CA Office of Environmental Health Hazard Assessment (**www.oehha.ca.gov/water**), or from your healthcare provider.



CONTACT US

For more information, contact the water district's Groundwater Hotline at **(408) 630-2300.** Or use our **Access Valley Water** customer request and information system at valleywater.org to find out the latest information on district projects or to submit questions, complaints or compliments directly to a district staff person.

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